

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Connect America Fund)	WC Docket No. 10-90
)	
A-CAM Competitive Coverage)	
Challenge Process)	DA 16-378
)	

**A-CAM COMPETITIVE COVERAGE CHALLENGE
BY HAMILTON COUNTY TELEPHONE CO-OP**

Hamilton County Telephone Co-op (“HCTC”), by counsel and pursuant to the *A-CAM Challenge Public Notice*,¹ hereby files this challenge to competitive coverage contained in the current version of the Alternative Connect America Cost Model (“A-CAM”).

I. BACKGROUND AND INTRODUCTION

HCTC is a locally owned and operated local exchange carrier (“LEC”) providing voice telephone and Internet access within the exchanges of Belle Prairie, Belle Rive, Blairsville, Broughton, Dahlgren, Dale, and Macedonia in southern Illinois. As an incumbent LEC subject to rate of return (“RoR”) regulation, HCTC is affected by the Commission’s recent order reforming the Universal Service Fund (“USF”) mechanism for RoR carriers.

¹ *Wireline Competition Bureau Releases Alternative Connect America Cost Model Version 2.2 and Illustrative Results and Commences Challenge Process to Competitive Coverage*, WC Docket No. 10-90, Public Notice, DA 16-378 (rel. April 7, 2016) (“A-CAM Challenge Public Notice”).

As part of its efforts to reform support in areas served by RoR incumbent LECs, the Commission has determined that affected LECs will be given an opportunity to choose to receive model-based support for a 10-year term in exchange for meeting specified build-out obligations. Those that do not elect model-based support will receive legacy support that will itself be subjected to reforms aimed at targeting support and funding stand-alone broadband.

Support under the A-CAM will be prioritized based on areas that are unserved. Therefore, the Commission directed the Wireline Competition Bureau (“Bureau”) to exclude from the model those areas in which the incumbent or its affiliate provides voice and broadband service meeting the Commission’s standards using FTTP or cable technology. Similarly, the model will exclude areas where an unsubsidized competitor has certified that it provides voice and 10/1 coverage or better. In the previous version of the model, coverage by unsubsidized competitors was based on Form 477 reporting data as of December 31, 2014. To obtain a more updated coverage picture, the Commission determined that the model should incorporate Form 477 data as of June 30, 2015.

In the *A-CAM Challenge Public Notice*, the Commission announced the availability of the new version of the model, and invited parties to submit challenges to the competitive coverage included in that version. The Commission provided for a “streamlined” challenge process in which (1) competitors would file comments informing the Commission of any additional areas in which they have deployed broadband since June 30, 2015; (2) competitors would inform the Commission of any corrections made to their June 30, 2015 Form 477 data after February 19, 2016; and (3) affected parties would provide any other relevant information challenging the coverage data.

II. DISCUSSION

HCTC makes this submission to challenge the coverage by Wisper ISP, Inc. (“Wisper”), a wireless ISP. In reviewing A-CAM v.2.2, HCTC noted that Wisper’s claimed coverage, in HCTC’s study area and elsewhere, had expanded considerably from the previous versions of A-CAM. HCTC then conducted an investigation to determine whether another provider was offering fixed voice and broadband service to the areas listed in Form 477. As a result of its investigation, HCTC has concluded that Wisper’s Form 477 data as of June 30, 2015 greatly overstates the reach of its network. The results of HCTC’s investigation, and its proposal to remedy the over-reported coverage, are explained below and in the written statement provided by HCTC’s consultant, JSI (“JSI Statement”) attached hereto as Exhibit 1. HCTC also attaches a number of other exhibits, described in the sections that follow, supporting HCTC’s position regarding Wisper’s coverage.

A. Wisper’s Form 477 Coverage Claims Contradict Its CEO’s Prior Statement that Wisper Would “Cut Back” Its Expansion Plans.

As a backdrop to this challenge, it is useful to contrast Wisper’s claims of service expansion with previous statements made by Nathan Stooke, the company’s CEO, telling the FCC that the opposite would occur. In a Declaration² signed April 27, 2015, which was attached to a multi-association request for stay of the FCC’s rules reclassifying broadband Internet access service as a Title II service,³ Mr. Stooke stated, under penalty of perjury, that Wisper would “cut back on its plans to expand service” if the Title II rules were allowed to go into effect. Mr. Stooke claimed that “consumers will be directly harmed by such reduced investments, as they

² A copy of Mr. Stooke’s Declaration is attached as Exhibit 2.

³ Joint Petition for Stay of United States Telecom Association, CTIA – The Wireless Association, AT&T, Inc., Wireless Internet Service Providers Association, and CenturyLink (filed May 1, 2015 in GN Docket No. 14-28).

will be left with slower broadband speeds, less dense coverage, and absence of expansion into new areas.”

The Title II rules took effect June 12, 2015. Yet, contrary to Mr. Stooke’s sworn statement that there would be an “absence of expansion into new areas,” the company’s Form 477 reporting data as of June 30, 2015 claims it can expand its service from the 8,000 customers it currently serves, to more than 49,000 census blocks in Illinois, covering approximately 500,000 locations. Even assuming one location per census block, this would mean a more than six-fold increase in locations served.

Mr. Stooke made his declaration under oath, and to our knowledge there has been no public retraction or correction. Taken by themselves, Mr. Stooke’s prior statements would already cast serious doubt on the accuracy and integrity of the Form 477 data filed by the company. As shown in the sections that follow and in the attachments provided, it is beyond dispute that Wisper’s Form 477 greatly overstates the company’s ability to serve HCTC’s service territory.

B. The Commission Should Only Rely on Form 477 Data That Is Plausible.

Although the Commission has opted to use streamlined challenge procedures that are grounded in Form 477 data, such data can only be relied upon if they meet a basic standard of plausibility.⁴ The point of any challenge process is to ensure the integrity of data so support is properly targeted. One important part of the challenge process will be the opportunity for competitors to update and correct their Form 477 data. Equally important to the integrity of the data, however, is the opportunity for affected incumbent LECs to challenge Form 477 data that is demonstrably inaccurate.

⁴ See JSI Statement at pp. 3-4.

The Commission has previously emphasized the paramount importance of accurate Form 477 data to the agency's statutory obligations and its commitment to promote broadband availability.⁵ For that reason, Form 477 filings must be signed by a company official, whose signature "certifies that he/she has examined the information contained in this Form 477 and that, to the best of his/her knowledge, information and belief, all statements of fact contained in this Form 477 are true and correct."⁶ In a recent Enforcement Advisory, the Commission stated that "Providers, including WISPs and other rural entities, are on notice that failure to timely file Form 477 reports may result in enforcement action, including monetary penalties."⁷

Though the Commission has been clear about its enforcement authority and the critical need for accurate, reliable Form 477 data, the incentives for accurate reporting are not strong. If a competitor overstates its coverage, it may benefit in the form of corresponding reductions to the support received by an incumbent LEC with which it competes. Because competitors have material incentives to leave intact any over-reporting of coverage, it would be a mistake to rely solely on competitors' updates and corrections. Incumbent LECs must have the opportunity to make a factual demonstration when a Form 477 filing materially overstates coverage. This is what HCTC seeks to do in the instant filing.

⁵ See *Modernizing the FCC Form 477 Data Program*, Report and Order, WC Docket No. 11-10 (rel. June 27, 2013) at ¶¶ 6-7 ("Over time, the Commission's reliance on the SBI data to support its universal service policies will transition to reliance on data collected on Form 477. Thus, the data collected in Form 477 are critical to measuring whether we are meeting our universal service mandate. ... Accurate, detailed data about deployment and subscription also help further the Commission's public safety goals."). See also FCC Enforcement Advisory, *Providers are Reminded That They Must File Complete and Accurate Form 477 Reports Every Six Months*, DA 11-1992 (Dec. 16, 2011).

⁶ FCC Form 477 Instructions (Dec. 31, 2015) at p. 32.

⁷ FCC Enforcement Advisory, *Providers Must File Complete and Accurate Form 477 Reports Every Six Months*, DA 15-1140 (Oct. 7, 2015) at p. 2.

C. Wisper Has Significantly Overstated Its Coverage.

As demonstrated in the JSI Statement, HCTC has determined through a multi-step analysis that Wisper's Form 477 overstates its coverage to such an extent that it fails to meet a basic standard of plausibility.

First, HCTC demonstrates that Wisper's purported coverage is implausible on a macro level. Currently, Wisper employs 56 people and provides service to approximately 8,000 customers; yet according to its Form 477 data, it is currently able to serve more than 49,000 census blocks representing approximately 500,000 locations in Illinois alone. Wisper's representation that it could achieve a more than six-fold increase in its customers with its current network architecture⁸ is simply not realistic.

Second, HCTC demonstrates the implausibility of Wisper's coverage claims on a micro level. Specifically, as explained in the JSI Statement, given the small number of cell sites and the limited capacity of those sites, Wisper's claimed coverage is not just implausible – it is impossible.

HCTC provides, as Appendix A to the JSI Statement, a Form 477 Wireless Overlap Coverage Analysis, performed by Palmetto Engineering & Consulting ("Palmetto Report"). According to the Palmetto Report, because service will inevitably degrade as new subscribers are added, "Wisper Internet Service is categorically unable to provide the level of Internet service represented in their Form 477 reporting data as of June 30, 2015 in the Hamilton County Telephone Co-op service area."⁹ As a result, the Palmetto Report concludes, "Wisper's

⁸ See Form 477 Instructions (Dec. 31, 2015) at p. 17 ("For purposes of this form, fixed broadband connections are available in a census block if the provider does, or could, within a service interval that is typical for that type of connection – that is, without an extraordinary commitment of resources – provision two-way data transmission to and from the Internet [at the required speeds] to end-user premises in the census block.")

⁹ Palmetto Report at p. 2 (JSI Statement at p. 18).

representations of service coverage are utterly implausible and their Form 477 provides a fundamentally inaccurate representation of 10/1 service availability.”¹⁰ The Palmetto Report also notes that the 586 census blocks in HCTC’s service territory in which Wisper claims the ability to provide 10/1 service are “distributed around HCTC’s service area, including many areas where no Wisper towers are located or measurable signals can be found or detected, and a much more expansive area where observed signal is insufficient to provide 10/1 service.”

These limitations are also described in a Wisper technical support brochure.¹¹ In that brochure, Wisper describes some of the challenges of expanding service in response to demand:

We have found that once we connected more than 20 subscribers on a single Access point, things started to degrade, and that when there were more than 30 per access point, really started to fall apart. In the 2.4 GHz band, our numbers trend lower than that, probably closer to 10 to 20 subscribers per sector.

These challenges are also illustrated through the anecdotal experiences related by Wisper customers, who often receive service far slower than the advertised 10/1 speeds.¹² Wisper’s own sales staff have also confirmed the company’s limited ability to serve HCTC’s service territory.¹³

Lastly, HCTC mapped the areas in which Wisper currently has customers to determine whether Wisper is claiming the ability to provision service far beyond the areas it currently serves. That map, which is provided on p. 11 of the JSI Statement, shows that Wisper’s current customers are located mostly outside of HCTC’s service territory. Those clusters of customers within HCTC’s area are concentrated in the north. As noted in the JSI Statement, “if the

¹⁰ *Id.*

¹¹ http://www.converge-tech.com/v/vspfiles/assets/pdfs/CS_Wisper_03142016a.pdf (last viewed on April 28, 2016). See accompanying discussion in JSI Statement at pp. 8-9.

¹² See JSI Statement at p. 31, Appendix B (Declaration of Mr. Randy Reyling).

¹³ See *id.* at pp. 33-34, Appendix C.

company could indeed serve a broader geography, its customer base would reflect that capability.”¹⁴

In sum, based on the inherent limitations of Wisper’s network and the current geography of existing customers, the service expansion capabilities claimed on Wisper’s Form simply cannot be believed.

D. The Bureau Should Update A-CAM to Re-include the Census Blocks and Locations That Were Removed Due to Wisper’s Inaccurate Form 477.

In the preceding section, HCTC has demonstrated that Wisper’s Form 477 data as of June 30, 2015 claims coverage in significantly more areas than it actually serves, or is able to serve. In keeping with the Commission’s streamlined approach, HCTC believes the Commission should adjust the A-CAM to reflect these facts by removing the census blocks set forth in Appendix D to the JSI Statement.¹⁵ This would respect the Commission’s overall commitment to using Form 477 data as a basis of competitive determinations for A-CAM, while recognizing the need to reject demonstrably inaccurate Form 477 information that would severely impact the support available under the cost model.

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¹⁴ *Id.* at p. 12.

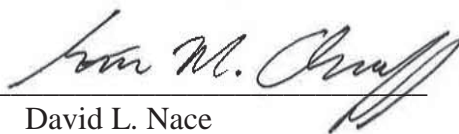
¹⁵ *Id.* at pp. 36-49.

III. CONCLUSION

Because HCTC has demonstrated that Wisper has significantly overstated its coverage, and that error will severely impact the targeting of support to areas that need support, HCTC urges the Commission to make the necessary adjustments to the A-CAM so that it properly treats the census blocks in Appendix D to the JSI Statement as unserved.

Respectfully submitted,

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April 28, 2016

Exhibit 1 – JSI Statement



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**STATEMENT OF JSI
IN SUPPORT OF
HAMILTON COUNTY TELEPHONE CO-OP
A-CAM COMPETITIVE COVERAGE CHALLENGE**

JSI hereby submits the following statements in support of the Hamilton County Telephone Co-op (“HCTC” or “Cooperative”) with its challenge submitted in connection with the April 7, 2016 Public Notice which published the preliminary determination of unsubsidized competitive coverage for rate-of-return Incumbent Local Exchange Carrier (“ILEC”) study areas.¹ The challenge filed is made pursuant to the *Public Notice* and paragraph 71 of the Report and Order, Order and Order on Reconsideration, and Further Notice of Proposed Rulemaking released on March 30, 2016 in the above-referenced proceeding (“Order or USF Reform Order”) by the Federal Communications Commission (“FCC” or “Commission”),² HCTC challenges the competitive coverage in certain census blocks contained in the latest version of the A-CAM model (ver. 2.2).

I. BACKGROUND

HCTC is a small, rural, average schedule rate-of-return incumbent local exchange carrier offering voice and broadband service to customers within the exchanges of Belle Prairie, Belle Rive, Blairsville, Broughton, Dahlgren, Dale and Macedonia which span the majority of Hamilton County as well as parts of Wayne, White, Jefferson, Franklin, Gallatin, and Saline counties in Southern

¹ See Wireline Competition Bureau Releases Alternative Connect America Cost Model Version 2.2 and Illustrative Results and Commences Challenge Process to Competitive Coverage, WC Docket No. 10-90, Public Notice (rel. Apr. 7, 2016) (“*Public Notice*”).

² See *Connect America Fund et al.*, WC Docket No. 10-90 *et al.*, Order, FCC 16-33 (rel. Mar. 30, 2016) (“*USF Reform Order*”).

Illinois. The Cooperative's Study Area Code ("SAC") is 341024 and its FCC Registration Number ("FRN") is 0004-3234-99.

We greatly respect the herculean effort embodied in the FCC's USF Reform Order, and applaud the Commission's efforts to create mechanisms designed to foster an accelerated deployment of broadband service throughout rural America. The FCC has consistently articulated the importance of a robust broadband infrastructure to the country's economy, and the central role regulatory policy must play in promoting broadband deployment in rural high-cost areas. In his statement accompanying the release of the USF Reform Order, Chairman Wheeler Noted:there are plenty of rural areas where the incentives to compete just aren't there. Local demand will not support the deployment of robust, modern, world-class communication in these areas. *The Commission's universal service program is one of the most important tools at our disposal to spur broadband deployment in unserved areas, maintain existing broadband service in high-cost areas, and ensure that consumers and businesses in rural America have the same online opportunities as their urban and suburban counterparts.*" (emphasis added)

In modifying its rules surrounding the distribution of support designed to spur broadband deployment, the Commission adopted a voluntary path to model based support employing the Alternative Connect America Cost Model (A-CAM) as a mechanism to define support for eligible rate of return providers. With regard to the A-CAM, the Commission recognized "there is a wide disparity among rate of return study areas regarding the extent of coverage meeting the Commission's minimum standard of 10/1 Mbps service"³ and further noted "The option of receiving model-based support will provide the opportunity for carriers that have made less progress in their broadband deployment than other rate-of-return carriers to "catch up"."⁴

³ *Id* at para. 20.

⁴ *Id*.

HCTC is a prototypical candidate for the A-CAM. The Cooperative is an Average Schedule company whose revenue streams, lack of scale, and aversion to capital risk in the face of evolving regulatory policy, have made it difficult to historically commit to underwriting the material investment necessary to aggressively upgrade plant to deliver 10/1 service. As evidenced in HCTC's Form 477 data as of June 15, 2015, none of its rate of return locations are presently supported by 10/1 service.

Based on the FCC's A-CAM runs that preceded the release of the USF Reform Order, including run 5.2 released just 7 weeks prior to publication of A-CAM run 6.4 released attendant with Public Notice DA 16-378, the Cooperative was anticipating a material increase in support, and had begun making preparations to dramatically accelerate its fiber/broadband deployment to existing Cooperative members. Specifically, A-CAM run 5.2 reflected Model calculated support of \$3,423,282 per year, as compared to the \$638,000 in support projected for 2016. However, support associated with A-CAM run 6.4 fell by nearly 80% to \$715,049. In assessing causation, it was determined that the June 30th, 2015 Form 477 filed by a Wireless Internet Service Provider (WISP) named Wisper ISP, Inc. ("Wisper") had resulted in the elimination of 2,444 locations out of 2,956 total rate of return locations associated with census blocks in HCTC's area. As the incontrovertible evidence below will illustrate, the Form 477 filed by Wisper is profoundly inaccurate, and cannot in any meaningful manner be relied upon in conjunction with the Commission's determination of appropriate support.

II. ARGUMENT

A. To Be Relied Upon, Form 477s Must Be Plausible on Their Face.

We fully understand the philosophical underpinnings of the FCC’s competitive overlap framework and the “Walden Rule” upon which it is based.⁵ However, in order for that rule to be operative, service within the definition set forth by the FCC must, in fact, exist. Given the importance of USF as a tool to achieve broadband coverage, and given the reliance of the FCC on the Form 477 as a mechanism to establish targeted distribution of that critical mechanism, some basic litmus test of reasonableness must be applied when data filed by a particular provider are subject to challenge and introduced to a process explicitly designed to consider that data.

We recognize the FCC’s desire to abstain from being drawn into a forensic exercise involving disputed competitive overlap. However, we believe that in order to be relied upon as a quanta of data appropriately integrated into the A-CAM process, a Form 477 must, on its face, be plausible in its representations. In other words, if on its face, a Form 477 cannot be supported as plausible, the entire Form 477 must be rejected as a meaningful tool to use in calculating support.⁶

B. A Basic Litmus Test of Plausibility Enables Process Integrity, and Supports the Tight Timeline Set Forth by the Order With Regard to A-CAM Logistics.

As noted previously, the FCC has emphasized that USF distribution represents a vital public policy tool in driving broadband availability. With this in mind, we submit that protecting process integrity associated with determination of USF distributions should take on an in-kind level of importance. The request for a plausibility standard as it applies to consideration of HCTC’s challenge will enable process integrity by eliminating data which would undermine the goals set forth in the Commission’s Order. This standard – which requires the rejection of Form

⁵ See Section II. C.1., following.

⁶ In instances where competitive overlap exists as a consequence of a wireline competitor, assessment of coverage can be far more direct and conclusive. Either network exists, or it does not. Either a competitor is subsidized, or it isn’t. With regard to fixed wireless operators, however, assessment of coverage, and the relative number of locations serviceable can be a more subjective exercise. In such situations, a standard of plausibility allows a basic assessment of whether the Form 477 should or should not be relied upon for calculation of support.

477 data if it is fundamentally flawed – will avert a more forensic discussion and accompanying exchange between the parties of “degrees of inaccuracy,” and thus allow for an expeditious ruling on HCTC’s challenge. Further, it will insure that the abbreviated timeline set forth for the A-CAM election process, and the final determination of distributable amounts in the A-CAM process as a whole, is preserved.⁷

C. Wisper’s Representations of Service Capabilities and Coverage are Simply Not Plausible:

Wisper’s representations of service coverage and capabilities are utterly implausible, and this conclusion is supported by basic technical realities, basic laws of physics, common sense, and a range of anecdotal evidence.

1. The Implausibility of Wisper’s Form 477 Representations – A “Macro Perspective”

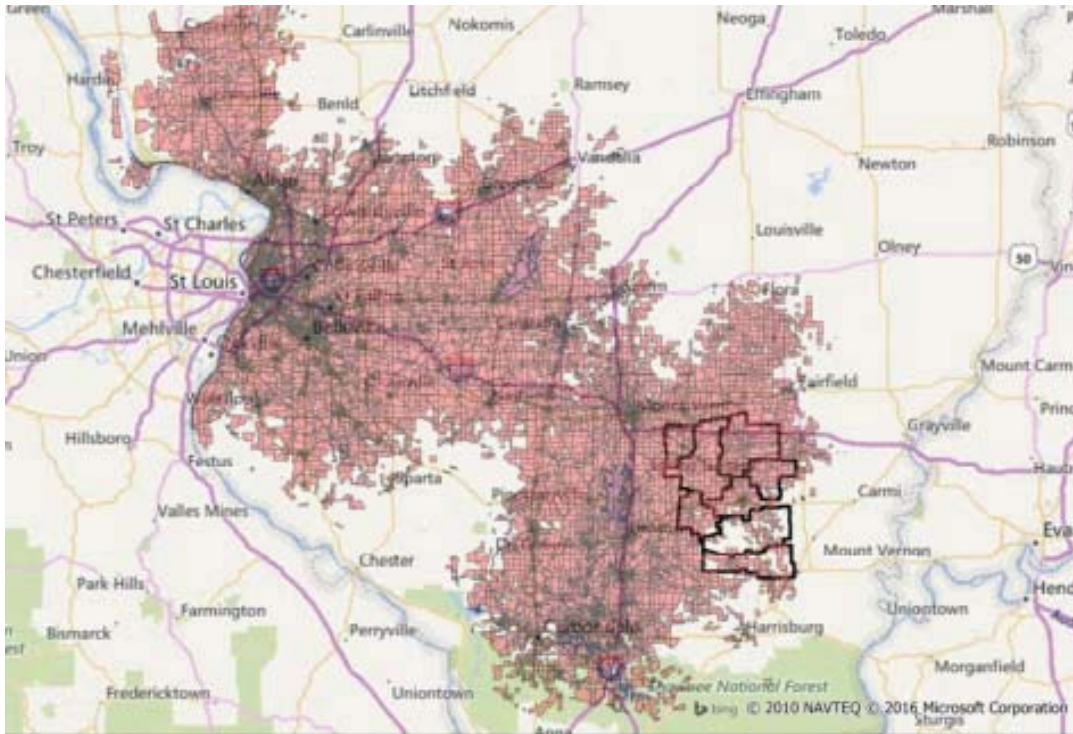
Based on the information provided in Wisper’s Form 477, the company is representing that it is capable of providing broadband service to each and every census blocks referenced in its filing at a 10/1 level of service within a service interval that is typical for that type of connection.

According to press releases issued by the company and its technology partners, Wisper employs a total of 56 people and presently serves roughly 8,000 customers throughout the metro St. Louis and

⁷ We believe, given the abbreviated timeline set forth in the present challenge process that a plausibility standard both advances process integrity, and creates a measure of continuity in policy on the matter of competitive overlap as it applies to A-CAM and Modified Legacy Support mechanisms. Specifically, with regard to competitive overlap as it applies to modified legacy support, the Commission noted “We conclude that utilizing the procedural requirements adopted for the Phase II challenge process, *coupled with putting the burden of proof on the competitor to establish that it serves a census block, will best meet the Commission’s objectives for ensuring that support is not provided in areas where other providers are providing service without subsidies.*” Par. 134, FCC USF Reform Order 16-33 [emphasis added]. The plausibility standard introduces process integrity and allows an efficient means by which to assess whether a 477 should be considered, while creating a philosophical tie to the Commission’s articulated view that a measure of reasonableness in representation must be attained in order to demonstrate the existence of competition. Finally, the connection between information filed by a provider’s 477 and the level of support received by an incumbent provider is well understood. Insuring process integrity in the present challenge process insures that the 477 does not reflect a tool by which filers advance their own competitive interests or render manifest their opposition to FCC USF policy.

Southern Illinois geographies.⁸ In its Form 477 filing, the company represents it can provide service to just over 49,000 census blocks covering in excess of 500,000 locations at a 10/1 level of service.⁹

Wisper's Representation of 10 / 1 Coverage – Illinois Only



In order for the Form 477 representations to be valid, Wisper must stand ready to provide service to locations within the identified census blocks within a service interval that is typical for that type of connection (for example 10 days). Putting aside the fact that a technician must

⁸ See <https://www.wisperisp.com/about-us/>

⁹ Wisper's "macro" service representations are actually substantially more grandiose with extensive additional 10/1 coverage claimed in Missouri, Oklahoma and Arkansas spanning tens of thousands of additional census blocks and hundreds of thousands of additional locations. Data for this analysis was captured for Illinois only, and aptly demonstrates the implausibility of Wisper's claims of its ability to offer 10/1 service within a standard provisioning interval.

physically visit each premise to initiate service, the contention being made by the company in its Form 477 is that even when limiting service obligations to a single location per census block, it can achieve a 6X growth in customers within the service interval timeline prescribed by the Form 477, and that its network is currently architected and positioned to support the service demands such a scenario would impose.

The Walden rule holds that ratepayers should not bear the burden of USF support distributions if broadband is being provided by an unsubsidized competitor in the area to which support would otherwise be directed. The fundamental point, however, is if the “competitor” is not in a position to provide a basic measure of service across the geographies they represent they compete in (and one location per census block is an extremely low bar to clear), then competition cannot be deemed to exist for the purposes of eliminating support to an ILEC, particularly one that stands ready to meet the build out obligations and provide quality broadband access to *all* customers to which intended support would be provided. Further, it is a breach of basic logic for anyone to suggest that the Walden rule, and the competitive overlap standards built upon its premise, simply require an entity to file a report and maintain a web page representing service capabilities, while explicitly ignoring basic facts illustrating an entity’s inability to actually offer service within a given area if requested to do so.

It is clear that when examining the plausibility of Wisper’s representations at a “macro level” the company’s claims of service capability and coverage must be deemed implausible.

2. The Implausibility of Wisper’s Form 477 Representations – A “Micro View”

The facts surrounding the implausibility of Wisper’s representations are even more glaring when examined on a more micro level. Put simply, mathematics and physics render the claims made in Wisper’s Form 477 not only implausible, but simply impossible to support. As noted in the Palmetto Engineering and Consulting report found at Appendix A, the company operates three (3) towers within the company’s service territory. The specific characteristics of the in-area towers are identified below.

Tower	Tower Latitude & Longitude	Tower Height	Sectors / Access Points	Radio – Vendor	Spectrum Employed
Belle Rive	Lat: 38.234575° / Long: -88.741680°	110'	4	Ubiquiti	2.4 GHz
Opdyke	Lat: 38.257252° / Long: -88.789669°	160'	3	Ubiquiti	2.4 GHz
Belle Prairie	Lat: 38.216041° / Long: -88.567701°	90'	3	Ubiquiti	2.4 GHz

As reflected above, the towers located in HCTC’s area are relatively low height structures employing 2.4 GHz using Ubiquiti’s AirMax N Nanostation M2 hardware. From these basic facts, the implausibility of Wisper’s claims of service coverage can be quickly and categorically established.

As fully outlined in the Appendix A Palmetto Engineering and Consulting analysis, fixed wireless radios such as those employed by Wisper in HCTC’s area have a defined capacity, and are simply not capable of providing high bandwidth (over 5 Mbps) to large numbers of potential subscribers. The following quotation from Wisper’s CTO concerning the hardware and spectrum employed in HCTC’s area effectively outlines the limitations:

“When a high bandwidth user is added to the network, it impacts all of the customers in that area. It causes stability issues and drives up our time and cost of maintenance to deal with the issue. We have found that once we connected more than 20 subscribers on a single Access Point, things started to degrade, and that when there were more than 30 per access point, really started to fall apart. In the 2.4 GHz band, our numbers trend lower than that, probably closer to 10 to 20 subscribers per sector.” (Ian Ellison, Wisper CTO)¹⁰

Based on the guidance of network capability offered by Wisper’s own CTO, it becomes a matter of simple math to calculate the number of subscribers that Wisper could *potentially* serve within the typical service delivery standards set forth by the Form 477.¹¹

Tower	Sectors / Access Points	Customers Supported Per Access Point	Locations
Belle Rive	4	20	80
Opdyke	4	20	80
Belle Prairie	4	20	80
Totals	12	20	240

As reflected above, based on the guidance provided by Wisper’s own CTO, the company’s present ability to offer service is limited, at best, to 240 customers.¹² Wisper’s Form 477, on the other hand, represents service coverage and capabilities that remove 2,444 HCTC locations from the A-CAM associated with 586 census blocks. It is important to pause and reflect on the implications of this difference. Specifically, the delta between the customers estimated to be

¹⁰ http://www.converge-tech.com/v/vspfiles/assets/pdfs/CS_Wisper_03142016a.pdf

¹¹ Appendix E contains a high level overview of factors effecting serviceable coverage which incorporates select data from the Palmetto Engineering and Consulting Report.

¹² The number of potential customers created by bandwidth backhaul and radio capacity will then be limited to the geographies in which sufficient signal is present. As noted in the accompanying Palmetto Engineering and Consulting study, serviceable locations are far more limited in geography than that represented in the data submitted by Wisper’s June 30th 477.

serviceable based on Wisper's network capability as reflected above, and the total locations removed as a consequence of their 477 filing, represents over 2,000 actual residential households and small businesses whose access to broadband will be critically and adversely impacted if Wisper's 477 as filed is employed for the purposes of calculating HCTC's A-CAM. Such a reality makes examination of the representations made by Wisper's filing using a plausibility standard a critical exercise.

Anecdotal evidence of the practical impact of such network limitations can also be found in the customer feedback lodged on Wisper's Facebook page. Despite subscribing to a 10 Mbps service, many Wisper customers do not receive service anywhere near the prescribed 10/1 A-CAM benchmark level of speed. The declaratory statement of Mr. Randy Reyling who resides in HCTC's service territory is emblematic of this reality (see Appendix B).

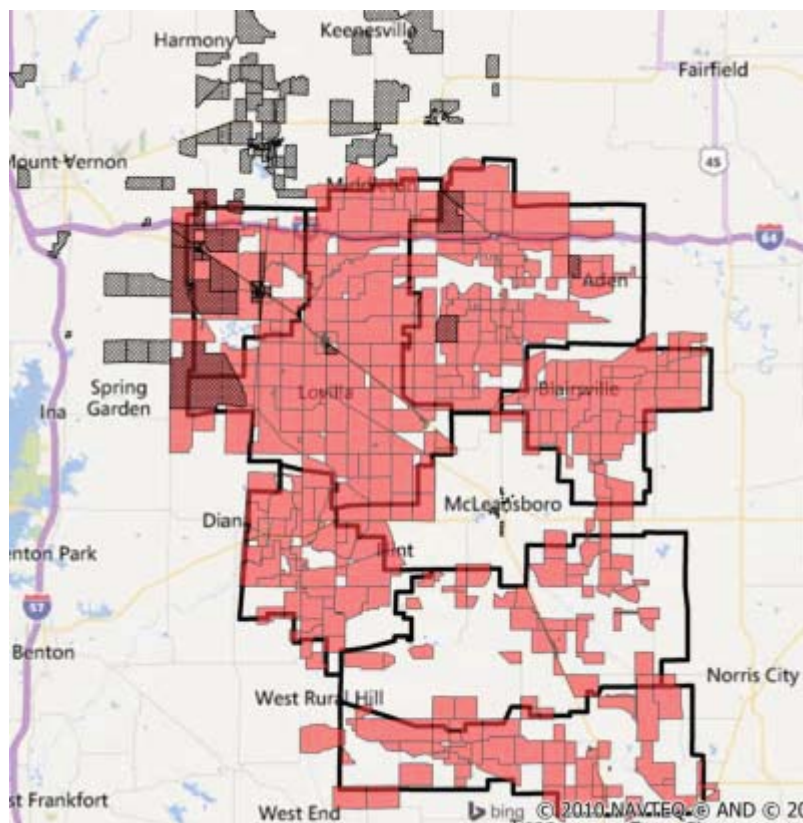
Beyond the categorical limitations imposed by network capacity noted above, Wisper's ability to service the geography claimed within its filed Form 477 is severely constrained by line of sight limitations inherent to the equipment and spectrum used by Wisper to service HCTC's certificated service area. HCTC operates in Southern Illinois with much of its service area marked by hills and valleys as well as significant tree cover, severely limiting Wisper's ability to service HCTC's service territory. Such limitations are clearly reflected in the drive test results conducted by Palmetto Engineering and Consulting to assess the relative signal reach of Wisper's service (see Appendix A).

Further, Wisper's own sales staff have confirmed the company's limited ability to serve HCTC's service territory.¹³ In response to calls placed, company sales representatives have

¹³ See Appendix C.

consistently noted limitations in geographic coverage, and have related that “10/1 service is unavailable in more places than it is available.”

Finally, the location of existing Wisper customers in HCTC’s area further corroborates the limited geography served by the company, and provides an important data point when assessing the company’s true service capabilities. The following map illustrates the location of Wisper customers based on data provided directly by Wisper CEO Nathan Stooke. Existing customers located in affected census blocks are indicated in gray.



The foregoing map illustrates HCTC’s service territory as the “doughnut” encircling McLeansboro, a larger town served by Frontier Communications. HCTC’s area is overlaid by census blocks claimed by Wisper’s Form 477 to be covered by 10/1 service. Mr. Stooke conveyed to HCTC that the company serves roughly 13 customers in Belle Prairie, roughly 64 customers in

Belle Rive, and several additional customers in Opdyke. It is important to note that the tower locations previously cited have been in place since 2005.

Thus in the 10+ years since the present service capability was established, fewer than 100 customers have come to be served by Wisper. Those customers are limited to a relatively confined area that is dramatically smaller in geographic scope than that claimed as serviceable in Wisper's Form 477.¹⁴ It is hard to escape the natural conclusion that if the company could indeed serve a broader geography, its customer base would reflect that capability.

Put differently, the constraining factors of limited tower locations, limited capacity, and limitations imposed by line of site considerations have naturally limited Wisper's service capabilities to the geographic scope associated with the company's current customer base.

III. CONCLUSION

The FCC has rightly noted that access to broadband is increasingly essential in today's information based economy, with the Chairman noting in his statement issued concurrent with the Order that *"the Universal Service program is one of the most important tools at our disposal to spur broadband deployment in unserved areas, maintain existing broadband service in high-cost areas, and ensure that consumers and businesses in rural America have the same online opportunities as their urban and suburban counterparts."* The FCC has noted in Enforcement Advisories that "The collection of accurate broadband information is a critical tool for the Commission to meet its statutory obligations and to promote the availability of broadband to every American."¹⁵ Given the priority that broadband expansion occupies as a matter of public policy,

¹⁴ As noted previously, such areas reflect where internet service is available. As the declaratory statement and referenced customer experience testimonials relate, it is not a definitive indicator of 10/1 service availability.

¹⁵ FCC Enforcement Advisory – FCC Form 477 Filing Requirements – DA 11-1992

the importance of USF as a tool to drive its availability in rural areas, and the criticality of the Form 477 as a mechanism to direct support, it is vital the FCC insures a measure of process integrity through the careful consideration of challenges filed pursuant to the *Public Notice* and paragraph 71 of the *USF Reform Order*.

Based on the information clearly set forth in these comments, much of which was derived from Wisper itself, we have established that:

- It is a categorical fact that Wisper's filing, on both a macro and micro level conveys a level of serviceable geography utterly beyond the company's actual service capabilities.
- The number of locations, ability to reliably deliver 10/1 service, and the geographic scope to which Wisper can offer service are significantly limited due to the current nature of its network.
- The preceding conclusions are supported by a range of anecdotal evidence including actual customer experience, drive test results, guidance from Wisper sales staff, statements made by the company's own CTO, and the company's current customer footprint.

Collectively these facts point to a Form 477 that is fundamentally flawed and reflects a level of service coverage that is utterly implausible. If the FCC acts on the flawed data submitted, it will withdraw from HCTC the dollars that the FCC's own model identifies as necessary to build out its network, and by extension, dramatically hobble the ability of the company to extend meaningful broadband service to rural consumers - the very individuals to whom the A-CAM was intended to accelerate service.

We are not asking the FCC to engage in a forensic exercise to assess relative coverage, rather, we are requesting that it ignore Wisper's filing for the purposes of calculating A-CAM support for HCTC as its contents are simply too flawed to be used in conjunction with this critical process.¹⁶ This conclusion is, in turn, based on the overwhelming evidence presented in these comments which clearly demonstrate the representations made in the filing are wholly implausible.

/s/ David Lewis

David Lewis
Vice President
JSI

April 28, 2016

¹⁶ See Appendix D listing of Wisper census blocks that should be removed from consideration pursuant to the plausibility standard set forth herein.

Appendix A

Palmetto Engineering and Consulting Report



April 25, 2016

Hamilton County Telephone Co-op

**Form 477 Wireless Overlap Coverage Analysis
Dahlgren, IL**

Prepared for:

Mr. Kevin Pyle

Executive Vice President & General Manager

Prepared by:

Palmetto Engineering and Consulting, LLC.

WWW.PALMETTOENG.COM

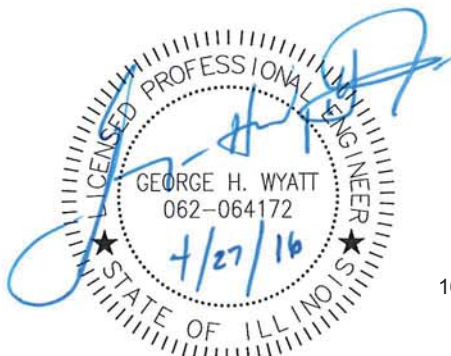


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1.0 Executive Summary

Palmetto Engineering & Consulting (PEC) reviewed and assessed the capabilities and capacity of the Wisper Internet Service within the service territory of Hamilton County Telephone Co-op.

PEC notes that form 477 filings are very specific in their requirements, reflecting only current network capabilities and not future network augmentations or modifications. This assessment is of Wisper's network capability as of April, 2016, and may include additional network enhancements that were not in operation as of the reporting period.

Based upon PEC's testing and analysis, PEC concludes that Wisper Internet Service is categorically unable to provide the level of Internet service represented in their Form 477 reporting data as of June 30, 2015 in the Hamilton County Telephone Co-op service area. As such, Wisper's representations of service coverage are utterly implausible and their Form 477 provides a fundamentally inaccurate representation of 10/1 service availability.

2.0 Introduction

Hamilton County Telephone Co-op (HCTC) provides landline telephone service throughout the rural areas of Hamilton County including the bordering six counties. Through its subsidiary Hamilton County Communication, Inc. (HCC) provides fixed wireless and DSL based Internet services to customers both within and outside of its traditional operating boundaries.

HCTC has provided service to its members utilizing support as a Rate of Return carrier in the high cost program of the Universal Service Fund. The FCC released its Order on Reconsideration changing the Universal Service Fund and establishing a Connect America Fund for Rate of Return carriers. This order established a challenge process to assist in the process of determining areas which are currently served by unsubsidized competitors providing service at 10/1.

Wisper Internet is a wireless internet service provider (WISP) that provides fixed wireless service to portions of Southern Illinois and has claimed the ability to provide 10/1 service in 586 census blocks within HCTC's service area covering 2,444 locations.

3.0 Factors Affecting Serviceable Wireless Coverage at 10/1

There are several physical characteristics that limit and restrict the serviceable coverage area and throughput of a wireless network.

1. **Level of Bandwidth Feeding the Tower:** – Customers will share available backhaul bandwidth, the upper limit of which will be defined by the level of broadband provisioned to the Tower.
2. **The number of Sectors on a tower:** Each tower will have a series of radios “pointing” in a distinct direction which collectively creates a coverage area. Each sector is controlled by a radio or Access Point (AP) that has a finite/fixed ability to extend service to a customer at a given level of bandwidth.
3. **Channel Bandwidth:** Each sector AP radio utilizes a specific Radio Frequency (RF) channel bandwidth at a specific frequency. The channel bandwidth options depend on the frequency band being utilized, the amount of spectrum available, other users of the same frequency band, and other interference sources. The channel bandwidth will categorically limit the amount of throughput that can be achieved.
4. **Signal Strength:** The ability to establish and maintain a strong signal will define the ability of a customer to get service at any bandwidth level. The stronger the signal, the more bandwidth can be consistently delivered up to the theoretical sector bandwidth. The minimum serviceable signal that could provide 10/1 service to the sector is defined as -75dBm. At that signal level, any customers on the sector will be effectively sharing the 10/1 service. This would be similar to multiple subscribers sharing a single 10/1 DSL service. A low signal customer will categorically degrade the service of all customers connected to that sector. Locations with a higher negative value than -75dBm are not capable of obtaining 10/1 service from the sector.
5. **Customers Served and Bandwidth Used:** Each of the previous factors creates a finite level of network capacity to serve a potential geography and the customers or subscribers residing within it. Customer number on a given tower/access point, and the amount of bandwidth they subscribe to, will affect the ability to serve the scope of additional customers.

The above identified factors create a categorical limit to a fixed wireless provider’s serviceable coverage potential, and the interplay between them can and will limit overall serviceable coverage.

As just one example, ample signal strength may be available at the customer location, but limitations in channel capacity or backhaul bandwidth will impose a categorical limitation to the number of customers capable of receiving service.

4.0 Wisper Wireless Towers

PEC has identified the towers that Wisper operates in and near HCTC's service area. To identify these towers, PEC verified that Wisper did not have any licensed operations in the service area, and utilized test equipment to identify all operations in the unlicensed bands of 900 MHz, 2.4 GHz, and 5.8 GHz.

The following tower sites were identified within HCTC's service area with Wisper Internet equipment:

1. Opdyke
2. Belle Rive
3. Bell Prairie City

The following tower sites were identified significantly outside HCTC's service area with Wisper Internet equipment, but do not provide a signal level strong enough for service to HCTC's service area:

1. McLeansboro
2. Wayne City
3. Bluford
4. Logan
5. Thompsonville

At the identified tower sites, no 900 MHz operations were present, and no 5.8 GHz operations were present other than backhaul connections between towers. All Wisper tower sites were identified as operating in the 2.4 GHz unlicensed band.

The antenna systems mounted at the identified tower locations were consistent with 2.4 GHz Point to Multipoint (PtMP) systems and 5.8 GHz Point to Point (PtP) backhaul systems.

5.0 Wisper Spectrum & Channel Sizing

We know that the 2.4 GHz Industrial, Scientific, and Medical (ISM) band is from 2400-2475 MHz, and it is channelized in 20 MHz channels for Wi-Fi-based systems. In the United States, this channelization includes 11 channels spanning 22 MHz each from 2401-2473 MHz which overlap with adjacent channels offset by 5 MHz and overlapping by 17 MHz. The following chart in Figure 1 shows the channel layout for the 2.4 GHz band.

2.4 GHz ISM Band: Channels [1,11] in North America; Channels [1,13] in Europe
Channels [1,14] in Japan

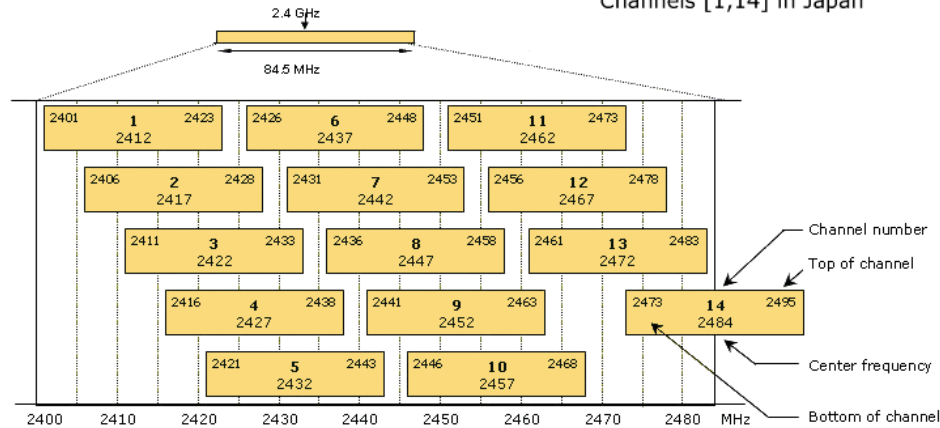


Figure 1 - 2.4 GHz Channel Plan

Channel overlap must be avoided to prevent interference which raises the noise floor and reduces throughput. Testing revealed that the Wisper Internet tower nodes are deployed with four sectors each; however the 2.4 GHz band does not have enough spectrum to provide four non-overlapping 20 MHz channels. The Wisper tower sites were operating with 10 MHz channels, which overcomes this overlap limitation.

6.0 Wisper Equipment & Throughput

We know, from testing at each tower location, that Wisper is utilizing Ubiquiti AirMax N Nanostation M2 equipment. We have guidance from Ubiquiti on the maximum number of users that are supported on these access points: http://dl.ubnt.com/UBNT_inter-ops-2.4g_2.pdf. The manufacturer guidance states that each AP will support a maximum of 40 MHz channel bandwidth and a maximum of 60 users per Access Point (AP) radio. The maximum number of users is irrespective of the throughput available per AP radio or the throughput per user.

We know from real world deployments with wireless equipment from a variety of vendors in a variety of frequency bands, that a significant portion of AP bandwidth is consumed by overhead and not available for customer throughput. To establish the throughput for the Ubiquiti equipment deployed with 10 MHz channels, PEC and HCTC tested a Ubiquiti AP with a single client unit and ran speed tests at various signal levels. The following information in Table 1 shows the results of this test:

Table 1 - Ubiquiti 10 MHz Channel Throughput

Signal (dBm)	Download	Upload
-40	33Mbps	30Mbps
-53	35Mbps	32Mbps
-64	18Mbps	28Mbps
-72	11Mbps	23Mbps

The results in Table 1 represent ideal conditions where the AP has only one subscriber and is not burdened by additional subscribers.

We know that as customers are added to a wireless sector, overall performance will be reduced due to traffic coordination among endpoints. We also know that even one client endpoint deployed at a marginal signal level will reduce the throughput of the entire sector regardless the signal strength for the other client endpoints.

Real world deployments occur in dynamic RF environments that include changes in the noise floor from local or distant interference. Interference can come from other devices operating in the band, unintentional emitters, solar and sunspot activity, atmospheric changes, heat and humidity, obstructions within the Fresnel Zone (which provides a mathematical model defining strength volumes of wave propagation within a specific region or zone), and foliage. In the 2.4 GHz band, water absorbs the signal, and foliage high in water content will attenuate the signal dramatically.

To avoid performance reductions from dynamic changes to the RF environment, most WISP's including HCTC will not deploy client endpoints with a signal weaker than -65dbm during seasons with high foliage.

Given these deployment parameters, PEC determined the overall sector throughput to be between 18-35Mb/s depending on the quantity and signal levels of the client endpoints. Performance could be less than 18Mb/s if endpoints are deployed with weaker signals or other interference occurs.

7.0 Wisper Sector Loading

We know that oversubscription is normal for a fixed wireless network like the Wisper Ubiquiti network. Overall performance is dependent on the usage patterns of the subscribers and amount of oversubscription. **Under ideal conditions with 35Mb/s in the sector, 3-4 customers could consume all the available bandwidth with a 10/1 service.**

Earlier in 2016, Ian Ellison, CTO of Wisper Internet said, “We have found that once we connected more than 20 subscribers on a single Access Point, things started to degrade, and that when there were more than 30 per access point, really started to fall apart. In the 2.4 GHz band our numbers trend lower than that, probably closer to 10 to 20 subscribers per sector.” http://www.converge-tech.com/v/vspfiles/assets/pdfs/CS_Wisper_03142016a.pdf

The following Table 2 shows the oversubscription calculations for Wisper’s sector loading capability for 10/1 services:

Table 2 - Wisper 2.4Ghz Oversubscription

Customers	10/1 BW (Mb/s)	Oversubscription (at 35Mb/Sector)	Performance
3	30	1:1	Excellent
10	100	2.9:1	Good
15	150	4.3:1	Marginal
20	200	5.7:1	2.4Ghz Breakdown

In a deployment with all customers having a 10/1 service, Wisper’s deployment experience would allow about a 5:1 maximum oversubscription. These loading numbers are likely based on subscribers with less than 10/1 service. PEC and HCTC experience similar sector loading of 20-25 customer endpoints, but with subscriber services of 3-5Mb/s maximum.

8.0 Wisper Maximum Subscriber Base

We know that only three tower sites, representing 12 sectors can provide a signal level strong enough to provide service to customers in the HCTC service area. **If all 12 sectors were loaded near the breaking point of 20 customers per sector, that would represent a maximum of 240 customers within the HCTC service area under ideal conditions with strong signals to all endpoints.**

9.0 Wisper 10/1 Service Claims

For a census block to be removed from ACAM consideration, an unsubsidized competitor must be able to serve at least one location in the census block at 10/1. Wisper claimed the ability to provide 10/1 service to 586 census blocks representing 2,444 locations in HCTC’s service area.

The 586 census blocks are distributed around HCTC’s service area, including many areas where no Wisper towers are located or measurable signals can be

found or detected, and a much more expansive area where observed signal is insufficient to provide 10/1 service.

10.0 Conclusion

Based on the capacity limitations of Wisper Internet's network, PEC concludes that Wisper's network is categorically unable to provide a level of service remotely approaching that claimed in Wisper's Form 477, and that Wisper's Form 477 is prima facie false and unusable for an exercise requiring an accurate depiction or understanding of 10/1 service availability offered by Wisper even assuming a 1 location per census block threshold.

11.0 Appendix: Service Testing Results

Table 3 below shows the locations where service levels were tested, the identified tower/access points, and the measured signal levels:

Table 3 - Service Testing Results

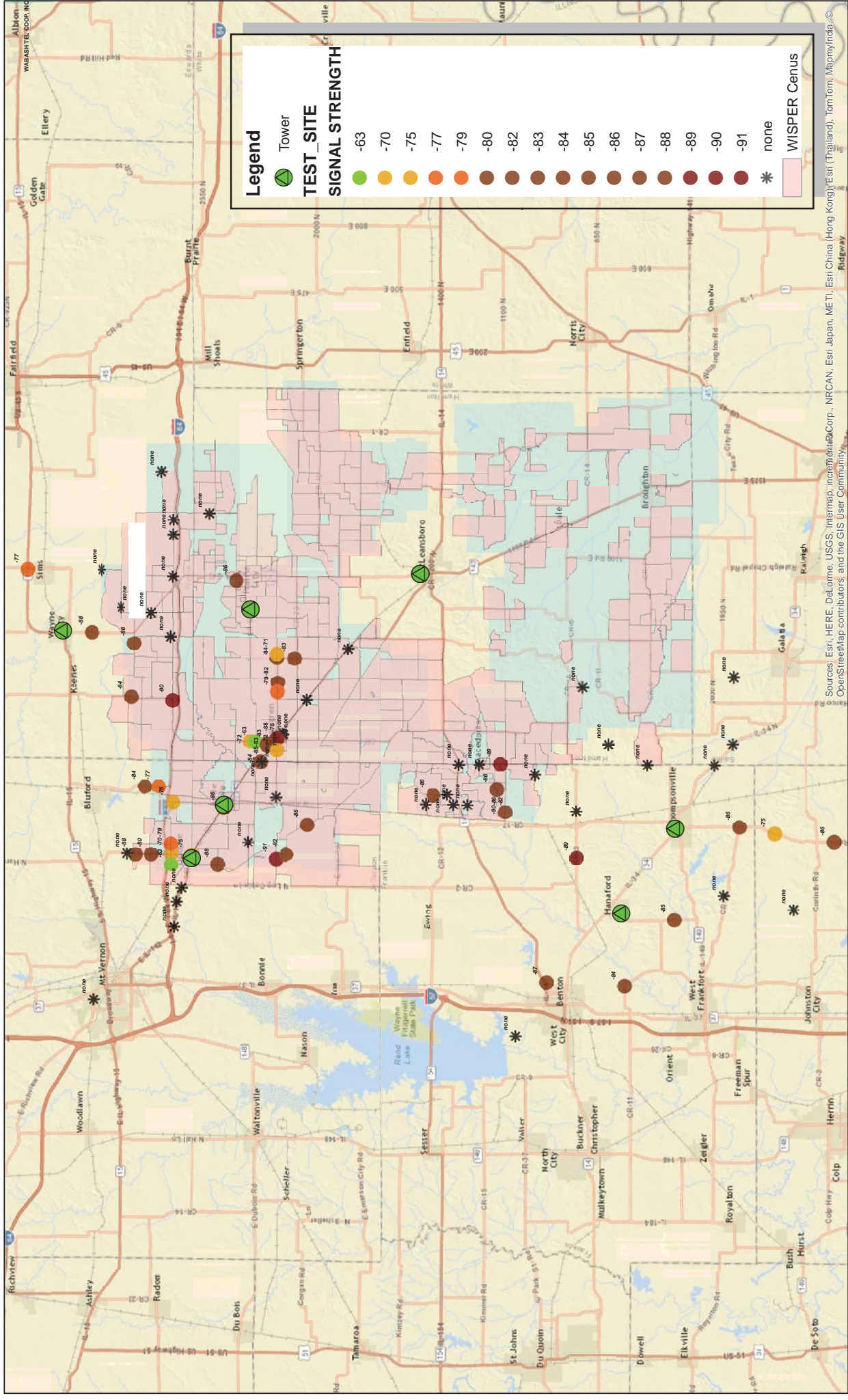
LAT/LONG	SIGNAL	SSID PRESENT	LOS/NLOS	FREQ/CHAN	LOCATION
38.21119, -88.70352	none	N/A	NLOS	N/A	BELL RIVE
38.17680, -88.64801	none	N/A	NLOS	N/A	BELL RIVE
38.14780, -88.60293	none	N/A	NLOS	2.422/3	BELL RIVE
38.27086, -88.74001	-75	BLVAP1-NORTHEAST	LOS	2.422/3	BELL RIVE
38.29029, -88.72578	-84	BLVAP1-NORTHEAST	NLOS	N/A	BELL RIVE
38.32607, -88.91551	none	N/A	NLOS	2.412/1	BELL RIVE
38.25748, -88.78679	-75	BLRVAP1-NORTHWEST	NLOS	N/A	BELL RIVE
38.26469, -88.81660	none	N/A	NLOS	N/A	BELL RIVE
38.26808, -88.82895	none	N/A	NLOS	N/A	BELL RIVE
38.19864, -88.73472	none	N/A	NLOS	2.462/11	BELL RIVE
38.20912, -88.70351	-84	BLRVAP1-SOUTHEAST	NLOS	N/A	BELL RIVE
38.21754, -88.77507	none	N/A	NLOS	2.412/1	BELL RIVE
38.23940, -88.79507	-88	BLRVAP1-NORTHWEST	NLOS	2.442/7	BELL RIVE
38.19860, -88.79044	-91	OPDYKEAP1-SOUTH	NLOS	2.452/9	BELL RIVE
38.17688, -88.76017	-86	BLRVAP1-SOUTHWEST	NLOS	2.452/9	BELL RIVE
38.19142, -88.78642	-82	BLRVAP1-SOUTHWEST	NLOS	2.452/9	BELL RIVE
38.23530, -88.74464	-86	OPDYKEAP1-SOUTH	NLOS	N/A	OPDYKE
38.20819, -88.70354	none	N/A	NLOS	2.427/4	OPDYKE
38.27217, -88.78522	-70	OPDYKEAP1-NORTHEAST	LOS	2.427/4	OPDYKE
38.28612, -88.78589	-80	OPDYKEAP1-NORTHEAST	LOS	2.427/4	OPDYKE
38.29715, -88.78580	-88	OPDYKEAP1-NORTHEAST	NLOS	N/A	OPDYKE
38.30275, -88.78498	none	N/A	NLOS	N/A	OPDYKE
38.26998, -88.85072	none	N/A	NLOS	N/A	OPDYKE
38.22636, -88.54208	-86	BPAP1-NORTHWEST	NLOS	N/A	BELL PRAIRIE

Hamilton County Telephone Co-op
Form 477 Wireless Overlap Coverage Analysis

38.28587, -88.57050	none	N/A	NLOS	2.412/1	BELL PRAIRIE
38.32723, -88.58813	-88	BPAP1-NORTHWEST	NLOS	N/A	BELL PRAIRIE
38.18532, -88.61151	-83	BPAP1-SOUTHWEST	NLOS	2.447/8	BELL PRAIRIE
38.24502, -88.48213	none	N/A	NLOS	N/A	BELL PRAIRIE
38.27856, -88.44456	none	N/A	NLOS	N/A	BELL PRAIRIE
38.27032, -88.50080	none	N/A	NLOS	N/A	BELL PRAIRIE
38.31844, -33.53197	none	N/A	NLOS	N/A	BELL PRAIRIE
37.95441, -88.90453	-84	WISPERZONE 17-32S	NLOS	2.442/7	LOGAN
38.00928, -88.90032	-87	WISPERZONE 17-64E	NLOS	2.412/1	LOGAN
38.03098, -88.94839	none	N/A	NLOS	N/A	LOGAN
37.91949, -88.84489	-85	WISPERZONE 17-22S	NLOS	2.442/7	LOGAN
37.88475, -88.82345	none	N/A	NLOS	N/A	LOGAN
37.83579, -88.83562	none	N/A	NLOS	N/A	LOGAN
37.98775, -88.78929	-89	WISPERZONE 17-22E	NLOS	2.424/33	LOGAN
37.98782, -88.74779	none	N/A	NLOS	N/A	LOGAN
38.01691, -88.71493	none	N/A	NLOS	N/A	LOGAN
37.89103, -88.70667	none	N/A	NLOS	N/A	THOMPSONVILLE
37.87852, -88.68842	none	N/A	NLOS	N/A	THOMPSONVILLE
37.87777, -88.62849	none	N/A	NLOS	N/A	THOMPSONVILLE
37.93832, -88.70658	none	N/A	NLOS	N/A	THOMPSONVILLE
37.96563, -88.68829	none	N/A	NLOS	N/A	THOMPSONVILLE
37.98366, -88.63701	none	N/A	NLOS	N/A	THOMPSONVILLE
38.27205, -88.59184	none	N/A	NLOS	N/A	WAYNE CITY
38.27094, -88.64867	-90	BPAP1-NORTHWEST	NLOS	2.412/1	WAYNE CITY
38.28060, -88.72568	-77	WISPERZONE 232-153S	NLOS	2.412/1	WAYNE CITY
38.29980, -88.64554	-84	WCAP1-WEST	NLOS	2.462/11	WAYNE CITY
38.29787, -88.59778	-86	BPAP1-NORTHWEST	NLOS	2.412/1	WAYNE CITY
38.29764, -88.56503	none	N/A	NLOS	N/A	WAYNE CITY
38.27075, -88.53826	none	N/A	NLOS	N/A	WAYNE CITY
38.27015, -88.48767	none	N/A	NLOS	N/A	WAYNE CITY
38.27207, -88.79545	-63	OPDYKEAP1-NORTHWEST	LOS	2.452/9	OPDYKE
38.27207, -88.79545	-88	WISPERZONE232-153W	NLOS	2.462/11	OPDYKE
38.27223, -88.77677	-79	OPDYKEAP1-NORTHWEST	NLOS	2.427/4	OPDYKE
38.04410, -88.72849	-86	WISPERZONE 17-65E	NLOS	2.412/1	MACEDONIA
38.04162, -88.70583	-89	WISPERZONE 17-41E	NLOS	2.462/11	MACEDONIA
38.03833, -88.74907	-86	WISPERZONE 17-32E	NLOS	2.457/10	MACEDONIA
38.06466, -88.74202	none	N/A	NLOS	N/A	MACEDONIA
38.05618, -88.70601	none	N/A	NLOS	N/A	MACEDONIA
38.07063, -88.70580	none	N/A	NLOS	N/A	MACEDONIA
38.08849, -88.73329	-86	WISPERZONE 17-22N	NLOS	2.442/7	MACEDONIA
38.09376, -88.74170	none	N/A	NLOS	N/A	MACEDONIA

38.07863, -88.73266	none	N/A	NLOS	N/A	MACEDONIA
38.07434, -88.74184	none	N/A	NLOS	N/A	MACEDONIA
38.37215, -88.53229	-77	WCAP1-EAST	NLOS	2.427/4	WAYNE CITY
38.40890, -88.54030	-78	WCAP1-NORTH	LOS	2.442/7	WAYNE CITY
38.43915, -88.56678	-83	WCAP1-NORTH	LOS	2.442/7	WAYNE CITY
38.46156, -88.60133	-79	WCAP1-NORTH	NLOS	2.442/7	WAYNE CITY

The attached map graphically shows the measured signal levels and technical parameters for the Wisper Internet service in the HCTC service area based on the data shown in Table 3.



Tower

TEST_SITE

SIGNAL_STRENGTH

none

WISPER Census

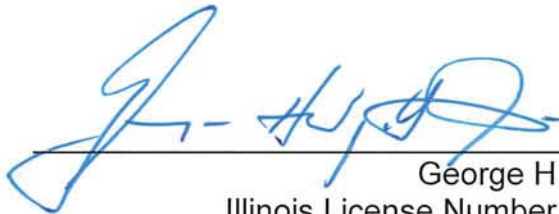
Sources: Esri, HERE, DeLorme, USGS, Inmap, Incorporated, Esri, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, Mapbox, OpenStreetMap contributors, and the GIS User Community



DECLARATION OF George H. Wyatt, Jr., P.E.

I, George H. Wyatt, Jr., P.E., under penalty of perjury, attest to the following:

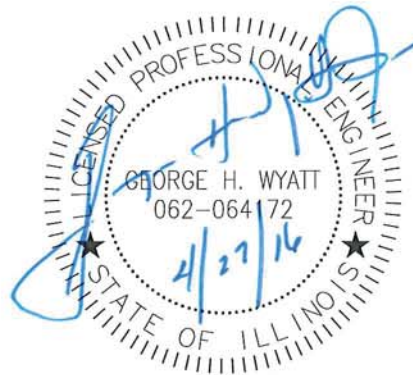
1. I am an Electrical Engineer, employed by the firm of Palmetto Engineering and Consulting (PEC), and I have been practicing in the field of telecommunications for over 23 years. I serve as President and CEO of PEC, and I am one of the senior professional engineers in this practice.
2. I graduated from Clemson University in May 1982, with a Bachelor's of Science (BS) degree in Electrical and Computer Engineering.
3. Palmetto Engineering & Consulting has been retained by Hamilton County Telephone Co-op ("HCTC") to review and assess the capabilities of the Wisper Internet Service ("Wisper") within the service territory of HCTC, as indicated by Wisper's Form 477 filing with the Federal Communications Commission in July 2015.
4. I confirm that the statements contained in this specific report prepared by PEC, other than those which are a matter of public record and need not be verified, accurately reflect the testing of speeds for broadband throughput from the Wisper system in the Hamilton County Telephone Co-op service area, analysis of data related to capabilities of the Ubiquiti AirMax N Nanostation M2 equipment, and calculations relative to the assertions made by Wisper in their 477 filing as to the ability to deliver throughput as declared.
5. The above statements are true and correct to the best of my knowledge and belief.



George H. Wyatt, Jr.

Illinois License Number 062064172

Dated: April 27, 2016



DECLARATION OF Howard J. Gorter, P.E.

I, Howard J. Gorter, P.E., under penalty of perjury, declare the following:

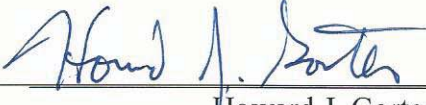
1. I am a Telecommunications Electrical Engineer and employed by the firm of CT&T, Inc. which is a wholly owned subsidiary of Palmetto Engineering & Consulting ("PEC") as Vice President of Engineering Operations. I have been practicing in the field of telecommunications for over 13 years.

2. I graduated from Dordt College in May, 2002, with a Bachelor's of Science (BS) degree in Engineering and a Bachelor of Arts (BA) in Computer Science.

3. Palmetto Engineering & Consulting has been retained by Hamilton County Telephone Co-op ("HCTC") to review and assess the capabilities of the Wisper Internet Service ("Wisper") within the service territory of HCTC.

4. I declare that the statements contained in foregoing report of PEC, other than those which are a matter of public record and need not be verified, accurately reflect the testing of signals and speeds for broadband throughput from the Wisper system in the Hamilton County Co-op service area, analysis of data related to capabilities of the equipment, and calculations relative to the assertions made by Wisper in their 477 filing as to the ability to deliver throughput as declared.

5. The above statement is true and correct to the best of my knowledge and belief.



Howard J. Gorter, P.E.

Dated: April 27, 2016

Appendix B

Declaratory Statement of

Mr. Randy Reyling

DECLARATION

I, Randy Reyling, declare and state the following:

1. My street address is Route #2 box 30 Dahlgren, IL 62828

2. I obtain Internet access service from Wisper Internet and my experience with that service is as follows: During peak hours my internet speeds are slow and unreliable. Most of the time my actual speeds are less than half of what I pay to receive.

3. I certify under penalty of perjury that the foregoing is true and correct. Executed on April 23, 2016.

Randy Reyling
[Signature]

Appendix C

Coverage Correspondence

Wisper Sales Organization

From: <dwood@wisperisp.com>
Date: Monday, April 25, 2016
Subject: FW: Wisper Coverage
To: Travis Milliron <trmilliron@gmail.com>

Hello,

The Velocity US plan is available as long as the location in question has clear line-of-sight to the tower for that respective area. We cannot provide service anywhere in Dahlgren. We do, however, have coverage in Wayne City (the tower there is the grain elevator). We do not provide service in Macedonia.

Thanks,

David Wood
Sales Associate
Wisper ISP

From: **David Wood** <dwood@wisperisp.com>
Date: Friday, April 22, 2016
Subject: FW: Wisper Coverage
To: trmilliron@gmail.com

Hello,

Per our conversation, we provide service in parts of the following towns: Mt Vernon, Opdyke, Belle Rive, Bonnie, Bluford, Waltonville, Bluford, Dix, Woodlawn, and some of the areas surrounding Dahlgren. Please let us know as soon as you have an address for where you are looking to move, and I can give you a better idea of what options we can provide. Below is a breakdown of the different plans we provide. Please note that not all of the faster packages are available in all areas.

Velocity ME – up to 5 mbps download and 1 mbps upload – \$39.99/month
Velocity US – up to 10 mbps download and 2 mbps upload – \$54.99/month
Velocity PRO – up to 15 mbps download and 3 mbps upload – \$79.99/month
Velocity ULTRA – up to 20 mbps download and 4 mbps upload – \$94.99/month

Thanks,

David Wood

Sales Associate

Wisper ISP, Inc.

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www.wisperisp.com

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Appendix D

Wisper Census Blocks that Should be Removed from Consideration

Census Block	Total Locations in Block
170550412001078	2
170550412001080	3
170550412001081	3
170550412001083	2
170550412001084	10
170550412001085	5
170550412001086	6
170550412001087	2
170550412001089	7
170550412001091	3
170550412001093	12
170550412001094	3
170550412001095	4
170550412001096	1
170550412001098	13
170550412001099	3
170550412001102	2
170550412001104	1
170550412001105	3
170550412001118	1
170550412001120	6
170550412001121	4
170550412002000	1
170550412002001	8
170550412002006	2
170550412002010	1
170550412002035	1
170659732001007	2
170659732001009	2
170659732001014	2
170659732001015	3
170659732001016	2
170659732001017	4
170659732001018	1
170659732001019	2
170659732001020	5
170659732001024	1
170659732001025	2
170659732001050	3
170659732001052	2

170659732001053	1
170659732001056	1
170659732001059	1
170659732001061	1
170659732001068	1
170659732001075	1
170659732001076	8
170659732001081	1
170659732001089	5
170659732001103	1
170659732001104	1
170659732001127	1
170659732001129	3
170659732001145	1
170659732001146	3
170659732001147	3
170659732001148	14
170659732001150	2
170659732001151	6
170659732001152	3
170659732001159	5
170659732001160	3
170659732001162	1
170659732001165	1
170659732001167	1
170659732002002	3
170659732002005	3
170659732002043	2
170659732002044	2
170659732002047	7
170659732002051	4
170659732002055	6
170659732002056	2
170659732002059	3
170659732002060	7
170659732002062	10
170659732002063	2
170659732002064	1
170659732002074	2
170659732002075	2
170659732002077	1
170659732002078	1
170659732002079	21
170659732002081	1

170659732002082	2
170659732002086	1
170659732002088	4
170659732002090	2
170659732002091	2
170659732002094	12
170659732002098	2
170659732002099	4
170659732002115	4
170659732002125	6
170659732002126	15
170659732002132	5
170659732002133	5
170659732002134	1
170659732002135	2
170659732002136	1
170659732002137	3
170659732002138	8
170659732002139	7
170659732002141	1
170659732002142	2
170659732002143	4
170659732002146	3
170659732002148	2
170659732002151	3
170659732002152	1
170659732002153	1
170659732002155	2
170659732002156	8
170659732003003	6
170659732003004	2
170659732003005	3
170659732003006	5
170659732003007	8
170659732003010	8
170659732003012	11
170659732003018	2
170659732003019	5
170659732003021	3
170659732003022	6
170659732003024	12
170659732003025	7
170659732003026	1
170659732003027	1

170659732003028	4
170659732003038	2
170659732003044	5
170659732003045	3
170659732003046	4
170659732003048	4
170659732003049	6
170659732003050	4
170659732003058	1
170659732003059	2
170659732003071	2
170659732003072	4
170659732003074	4
170659732003083	1
170659732003087	1
170659732003097	1
170659732003099	2
170659732003101	2
170659732003102	2
170659732003109	2
170659732003112	1
170659732003117	2
170659733001000	4
170659733001001	4
170659733001002	21
170659733001003	3
170659733001004	29
170659733001006	7
170659733001007	1
170659733001011	1
170659733001012	1
170659733001013	2
170659733001014	4
170659733001015	17
170659733001016	3
170659733001017	3
170659733001018	4
170659733001019	2
170659733001020	4
170659733001021	1
170659733001022	5
170659733001023	3
170659733001024	5
170659733001025	4

170659733001026	2
170659733001027	3
170659733001028	4
170659733001029	3
170659733001030	6
170659733001031	3
170659733001032	8
170659733001033	4
170659733001034	2
170659733001035	2
170659733001036	4
170659733001038	9
170659733001039	1
170659733001040	4
170659733001041	11
170659733001042	2
170659733001043	8
170659733001044	7
170659733001046	17
170659733001047	3
170659733001048	2
170659733001049	3
170659733001050	4
170659733001051	6
170659733001052	3
170659733001053	3
170659733001056	3
170659733001058	4
170659733001063	3
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170659733001077	7
170659733001079	1
170659733001080	5
170659733001081	3
170659733001082	5
170659733001084	3
170659733001085	6
170659733001087	7
170659733001088	11

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170659733001091	8
170659733001092	6
170659733001093	3
170659733001098	1
170659733001099	9
170659733001100	1
170659733001114	6
170659733002000	2
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170659733002002	2
170659733002005	1
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170659733002008	12
170659733002009	4
170659733002010	2
170659733002011	3
170659733002012	2
170659733002013	3
170659733002015	13
170659733002017	8
170659733002018	15
170659733002019	2
170659733002020	1
170659733002027	1
170659733002028	3
170659733002030	3
170659733002031	13
170659733002033	1
170659733002034	1
170659733002036	1
170659733002040	5
170659733002041	1
170659733002042	2
170659733002044	2
170659733002047	23
170659733002049	10
170659733002050	29
170659733002051	3
170659733002052	3
170659733002053	6
170659733002054	4
170659733002056	10
170659733002057	3

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170659733002060	3
170659733002061	4
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170659733002063	2
170659733002064	5
170659733002068	12
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170659733002071	4
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170659733002074	6
170659733002075	14
170659733002076	1
170659733002077	4
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170659733002081	3
170659733002082	6
170659733002083	78
170659733002084	4
170659733002086	3
170659733002087	1
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170659733002091	7
170659733002092	2
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170659733002101	1
170659733002102	3
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170659733002115	2
170659733002116	2
170659733002119	8
170659733002125	1
170659733002135	2
170659733002137	1
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170659733003007	1
170659733003008	3
170659733003009	1
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170659733003061	2
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170659733003068	3
170659733003070	2
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170659733003081	3
170659733003082	3
170659733003091	1
170659733003092	2
170659733003093	4
170659733003096	10
170659733003099	4
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170659733003124	1
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170659733003126	12
170659733003127	7
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170659733003207	9
170659733003215	1
170659733003231	1
170659733003235	1
170659733003238	2

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170810502002043	4
170810502002047	4
170810502002048	1
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170810504001002	2
170810504001003	2
170810504001004	20
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170810504001016	11
170810504001017	5
170810504001019	10
170810504001020	10
170810504001021	1
170810504001023	5
170810504001024	2
170810504001025	6
170810504001026	1
170810504001027	5
170810504001028	4
170810504001029	4
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170810504001031	11
170810504001033	2
170810504001035	1
170810504001036	3
170810504001039	11
170810504001040	3
170810504001042	5
170810504001043	2
170810504001044	4
170810504001046	12
170810504001047	14
170810504001048	4
170810504001076	4
170810504001077	3
170810504002000	3
170810504002001	9
170810504002002	1

170810504002003	3
170810504002005	3
170810504002006	4
170810504002007	3
170810504002010	4
170810504002014	3
170810504002016	8
170810504002017	4
170810504002018	7
170810504002019	5
170810504002024	6
170810504002025	3
170810504002026	3
170810504002027	4
170810504002028	4
170810504002032	2
170810504002033	4
170810504002034	1
170810504002036	2
170810504002038	6
170810504002039	9
170810504002040	3
170810504002041	6
170810504002042	10
170810504002043	8
170810504002044	9
170810504002045	3
170810504002046	7
170810504002047	5
170810504002048	4
170810504002050	3
170810504002051	5
170810504002052	3
170810504002053	3
170810504002054	3
170810504002055	2
170810504002056	1
170810504002059	1
170810504002060	4
170810504002064	2
170810504002069	1
170810504002073	5
170810504002074	1
170810504002075	3

170810504002076	1
170810504002077	1
170810504002078	6
170810504002079	1
170810504002080	1
170810504002081	3
170810504002082	4
170810504002083	6
170810504002084	5
170810504002085	5
170810504002088	1
170810504002089	1
170810504002090	2
170810504002091	1
170810504002093	7
170810504002097	9
170810504002098	13
170810504002099	7
170810504002101	15
170810504002102	2
170810504002105	15
170810504002107	6
170810504002108	1
170810504002109	6
170810504002110	3
170810504002111	2
170810504002112	4
170810504002113	1
170810504002114	10
170810504002115	1
170810504002116	2
170810504002117	1
170810504002118	1
170810504002119	2
170810504002120	3
170810504002123	2
170810504002124	2
170810504002126	14
170810504002128	2
170810504002129	2
170810504002130	12
170810504002131	7
171659556002003	1
171659556002004	1

171659556002005	2
171659556002006	5
171659556002007	1
171659556002008	2
171659556002029	1
171659557002002	3
171659557002003	2
171919553001062	4
171919553001063	1
171919553001064	3
171919553001065	2
171919553001066	13
171919553001099	1
171919553001109	7
171919553001110	1
171919553001112	7
171919553002072	6
171919553002075	3
171919553002076	7
171919553002077	13
171919553002078	3
171919553004060	1
171919553004071	1
171919553004072	4
171919553004073	8
171919553004075	2
171919553004076	2
171919553004077	3
171919553004078	4
171919553004079	2
171919553004081	7
171919553004082	4
171919553004083	3
171919553004086	9
171919553004087	5
171919553004088	4
171919553004089	4
171919553004090	4
171919553004091	4
171919553004093	4
171919553004094	3
171919553004095	1
171919553004096	2
171919553004097	6

171919553004100	2
171919553004114	2
171919553004120	8
171919553004121	9
171919553004124	2
171939583002166	2
170659732001106	4
170659732001108	5
170659733001065	4
170659733001068	4
170599727002020	2
170599727002021	2
170599727002024	1
170659732001173	6
170659732001177	1
171659556002001	1
171659556002032	2
171939584003200	3
Total Census Blocks	Total Locations
586	2,444

Appendix E

Factors Affecting Serviceable Coverage

Factors Affecting Serviceable Coverage at 10/1

- A. **Level of Bandwidth Feeding the Tower:** – Customers will share available backhaul bandwidth, the upper limit of which will be defined by the level of broadband provisioned to the Tower.
- B. **The number of Sectors on a tower and Channel Bandwidth:** Each tower will have a series of radios “pointing” in a distinct direction which collectively creates a coverage area. Each sector is controlled by a radio or Access Point (AP) that has a finite/fixed ability to extend service to a customer at a given level of bandwidth. Each sector AP radio utilizes a specific Radio Frequency (RF) channel bandwidth at a specific frequency. The channel bandwidth options depend on the frequency band being utilized, the amount of spectrum available, other users of the same frequency band, and other interference sources. The channel bandwidth will categorically limit the amount of throughput that can be achieved.
- C. **Signal Strength:** The ability to establish and maintain a strong signal will define the ability of a customer to get service at any bandwidth level. The stronger the signal, the more bandwidth can be consistently delivered up to the theoretical sector bandwidth. The minimum serviceable signal that could provide 10/1 service to the sector is defined as -75dBm. At that signal level, any customers on the sector will be effectively sharing the 10/1 service. This would be similar to multiple subscribers sharing a single 10/1 DSL service. A low signal customer will categorically degrade the service of all customers connected to that sector. Locations with a higher negative value than -75dBm are not capable of obtaining 10/1 service from the sector.
- D. **Customers Served and Bandwidth Used:** Each of the previous factors creates a finite level of network capacity to serve a potential geography and the customers or subscribers residing within it. Customer number on a given tower/access point, and the amount of bandwidth they subscribe to, will affect the ability to serve the scope of additional customers.

The above identified factors create a categorical limit to a fixed wireless provider’s serviceable coverage potential, and the interplay between them can and will limit overall serviceable coverage.

As just one example, ample signal strength be available at the customer location, but limitations in channel capacity or backhaul bandwidth will impose a categorical limitation to the number of customers capable of receiving service.

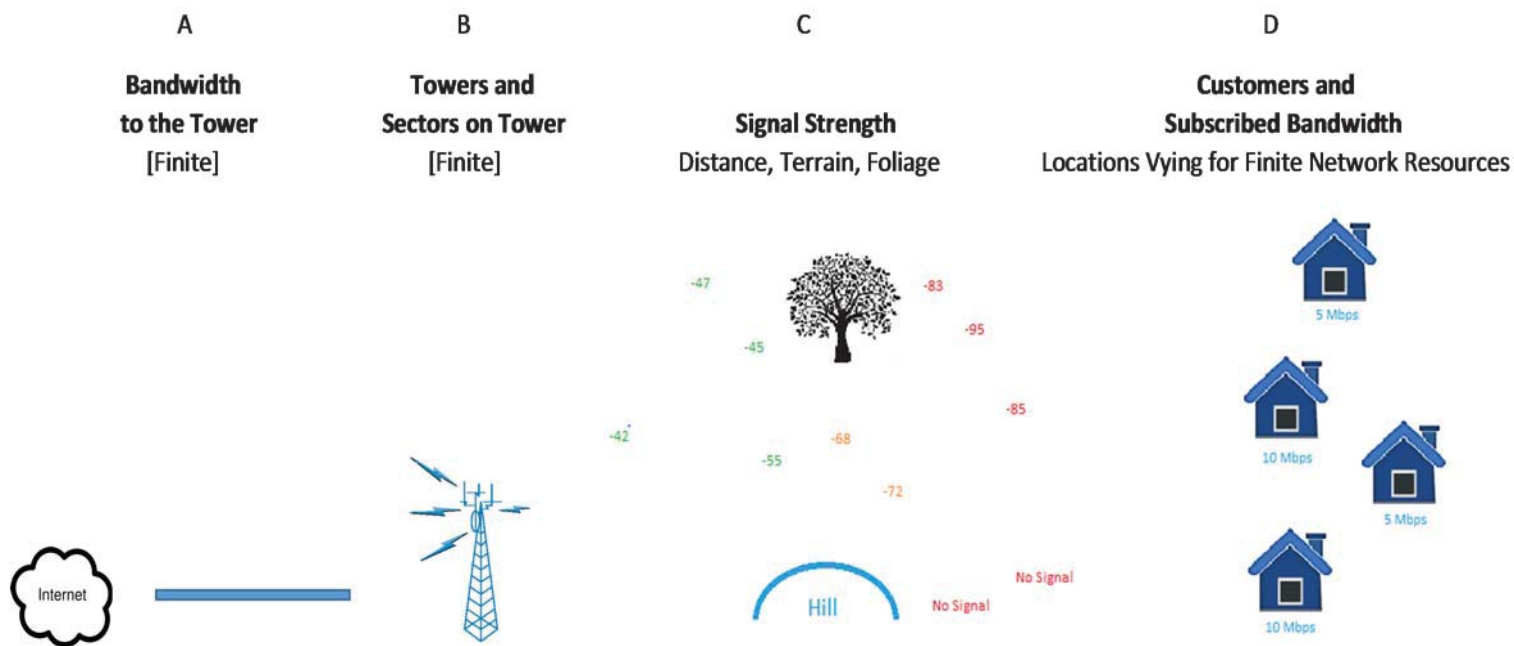


Exhibit 2 – Declaration of Nathan Stooke

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of

Protecting and Promoting the Open Internet

GN Docket No. 14-28

DECLARATION OF NATHAN STOOKE IN SUPPORT OF MOTION FOR A STAY

1. My name is Nathan Stooke and I am CEO/Founder of Wisper ISP, Inc. I have been the CEO since I started Wisper 11 years ago. I make this declaration in support of a Motion for a Stay of the rules adopted in the FCC’s “Open Internet” proceeding.

2. Wisper provides broadband Internet access service to 8,000 residential and business customers within a 120-mile radius around St. Louis, Missouri. The majority of our customers are located in Southern Illinois. Currently, Wisper provides that service as an information service that is not subject to regulation under Title II of the Communications Act as a common carrier service.

3. I am not a lawyer, but I understand that, if the FCC’s March 12, 2015 Open Internet Order takes effect, Wisper’s broadband Internet access service will, for the first time, become subject to common carrier regulation under Title II. In addition, Wisper’s broadband Internet access service will be subject to the FCC’s newly announced Internet conduct standard. For the reasons explained below, imposition of Title II obligations on Wisper would result in substantial and irreparable harm to our company.

4. Wisper currently has no in-house legal department. If the portions of the Order that subject broadband Internet access service to Title II take effect, Wisper will need to increase

substantially its expenditures on legal services. Wisper would need to hire at least two in-house lawyers and administrators as well as retain outside counsel in order to ensure Wisper's compliance with the obligations imposed by Title II. This would include, among other things, determining whether Wisper's existing practices with respect to its broadband Internet access service complies with the just and reasonable requirements of 47 U.S.C. §§ 201 and 202, the privacy requirements in 47 U.S.C. § 222, and the disability access requirements in 47 U.S.C. §§ 225, 251(a), and 255. Currently, none of these requirements apply to Wisper's broadband services.

5. In addition, Wisper would need to incur substantial expenditures on legal services to evaluate whether Wisper's current or future business practices violate the FCC's newly announced Internet conduct standard. As I understand it, this standard prohibits any practice that "unreasonably interfere[s] with or unreasonably disadvantage[s] (i) end users' ability to select, access, and use broadband Internet access service of the lawful Internet content, applications, services, or devices of their choice, or (ii) edge providers' ability to make lawful content, applications, services, or devices available to end users." Order ¶ 136. The FCC, however, has not provided meaningful guidance as to how this standard will be applied. Rather, the FCC has provided a "non-exhaustive list" of seven factors that it will use when implementing that standard on a case-by-case basis. *See id.* ¶¶ 138-145. This makes it particularly difficult for Wisper to know in advance whether any particular current or potential future practice will be viewed as consistent with the Internet conduct standard and will necessitate substantial expenditures on legal services to evaluate the risks that Wisper faces in continuing its existing service offerings and developing new offerings.

6. While Wisper does not currently employ usage-based billing like utilities, water, electricity and sewer do, we would like to reserve the right to institute such a plan if we believe it makes commercial sense. Wisper would be forced to change its business model to delay or slow expansion so that it could afford to litigate whether current such practices comply with the rules. Many opportunities require Wisper to provide a new service very quickly, in a matter of hours and days, and as a small company, we are able to take advantage of such opportunities. The need to ensure that our service is not subject to case-by-case litigation or after-the-fact decision could effectively render Wisper's competitive advantage null and void. Customers are requesting these services from Wisper because our larger competitors cannot provide service in the time frame the customers need.

7. The additional costs that the FCC's Order would impose on implementing new plans or services (or changing existing plans or services) are excessive when compared to the other operating costs of Wisper. We estimate that compliance costs of these "simple" regulations would constitute over 10% of Wisper's operating budget. This is a huge burden for Wisper and would unfairly affect our ability to maintain our business model because that 10% comes off the bottom line with no revenue attached to it.

8. Wisper will also have to make significant expenditures to comply with section 222's privacy obligations. Currently, Wisper does not have any restriction on how it uses information about its broadband customers for marketing purposes that might be considered "CPNI." Thus, for example, Wisper uses information about customers' broadband Internet service to market its interconnected VoIP service. While the FCC has provided detailed guidance as to how section 222(c) applies in the telephone context, it declined to provide such guidance in the Order. At a minimum, Wisper will need to retain legal counsel, at considerable

expense, to determine the extent to which its current use of broadband-related CPNI may be prohibited by section 222(c) and to evaluate what system and operational changes might need to be made to bring Wisper's marketing practices into conformance with the requirements of that section. Alternatively, Wisper may need to cease its existing use of broadband-related CPNI until the FCC issues meaningful guidance as to the applicable requirements. We believe that option will harm Wisper's bottom line and deprive broadband customers of other services they may value and that would save them money.

9. Similar concerns exist with regard to section 222(a). As I understand it, the FCC has interpreted this provision to protect against unauthorized disclosure of CPNI. Wisper takes its customers' privacy seriously, and has systems in place to safeguard its customers' information. I understand that, in the telephone context, the FCC has detailed regulations governing practices for authenticating individuals who request potentially protected information (whether by telephone, email or on-line) as well as requirements for notifying customers when account changes are made and processes for notifying law enforcement and customers of a data breach. Again, the FCC has not provided clear guidance as to how these restrictions apply in the broadband context. For this reason too, Wisper will have to incur substantial expenses to reevaluate its existing privacy practices to determine if they comply with how the FCC and the courts are likely to ultimately interpret the requirements of section 222.

10. As I understand it, all of the Title II obligations imposed by the Order can be potentially enforced by a complaint before the FCC or a lawsuit in federal court, including a class action. These additional compliance and potential litigation costs are material to Wisper and will prohibit us from spending money on other priorities, including expanding and improving service. It costs the party filing the class action lawsuit nothing to add companies to

the suit. Wisper has only about 8,000 retail customers. Wisper cannot afford to engage in costly litigation regarding the vague requirements imposed by the FCC's Order. Such a suit against Wisper would most likely force us to close the company.

11. Finally, the general level of uncertainty created by the FCC's Order will have a material impact on our company's day-to-day business decisions. It is very difficult to invest in new or innovative products or business plans without knowing whether the FCC will find aspects of the planned service unlawful. The uncertainty in how the FCC will apply the legacy Title II regime and the novel Internet conduct standard to broadband Internet access service providers will hamper Wisper's efforts in expanding its broadband service area, improving its broadband service, and rolling out new broadband product offerings. Investment decisions for capital expenditures that will improve the reach and quality of our network take into account the expected returns from the capital investment. Wisper is a privately funded company that 8,000 customers depend on. Our capital investments are always in the best interest of our customers, however, to continue to serve them, we must stay in business.

12. The added costs and uncertainty the Order would impose if the Title II regime and Internet conduct standard were to take effect would have a direct impact on Wisper's investment decisions, by reducing the potential return on new investments. At a minimum, the Order creates substantial uncertainty as to the returns that will be realized on any expenditures for new or expanded services. Projects that were viable investments under the existing regulatory regime may, after the Order, no longer provide sufficient returns to justify the investment.

13. Because of the risks and costs imposed by the Order, Wisper has cut back on its plans to expand service. For example, our plan was to triple the number of new base stations we would deploy each month to provide fixed wireless broadband to new customers in new areas

near our existing coverage area. As a result of the Order, and the uncertainty surrounding it, we have put those plans on hold. Likewise, we have tabled discussions for larger acquisitions that we had planned to pursue because we are uncomfortable with the risks and costs the FCC's new rules will impose on us.

14. Currently Wisper needs only three customers to justify deploying Internet service to a new area. Conservatively assuming that the Order's Title II and Internet conduct standard requirements will increase our operating costs by 10-15%, Wisper will need five customers to justify our investment, a 66% increase in customers needed leaving large numbers of customers without service. The FCC might also find that the way Wisper provides service to these customers does not meet the FCC's standards. The added costs could force Wisper to uninstall rather than upgrade these customers. Under the current regime, Wisper is able to deploy quickly and reach the maximum numbers of customers desperate for Internet access service. Adding a new layer of rules and regulations will likely make large percentages of potential projects uneconomical.

15. Moreover, consumers will be directly harmed by such reduced investments, as they will be left with slower broadband speeds, less dense coverage, and absence of expansion into new areas. Wisper spends almost all of its revenue on growing and upgrading its service. Consequently, the increased operating and compliance costs that Wisper would incur as a result of the Order would reduce our growth and upgrade budgets, which in turn will directly affect our customers and our ability to attract new customers. While the rules are intended to help customers, the reverse will happen, as Wisper will be forced to divert its resources away from upgrading its network and expanding service to rural customers. Wisper prides itself in having a 96% customer satisfaction rating and we strongly believe that by redirecting Wisper's resources,

our customer service will suffer. This, along with previously viable investments that are no longer an option due to the Order, will result in lost customers and reduced customer goodwill.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Nathan T Stooke

Nathan Stooke

April 29, 2015